

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number  
**WO 2005/052983 A1**

(51) International Patent Classification<sup>7</sup>: **H01J 45/00**

(21) International Application Number:  
PCT/US2003/034501

(22) International Filing Date: 30 October 2003 (30.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **THERMOCON, INC.** [US/US]; First Union Tower, 444 Seabreeze Blvd., Suite 620, Daytona Beach, FL 32118 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **DAVIS, Edwin, D.** [US/US]; First Union Tower, 444 Seabreeze Blvd., Suite 620, Daytona Beach, FL 32118 (US).

(74) Agent: **KONDRACKI, Edward, J.**; Miles & Stockbridge P.C., 1751 Pinnacle Drive, Suite 500, McLean, VA 22102-3833 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

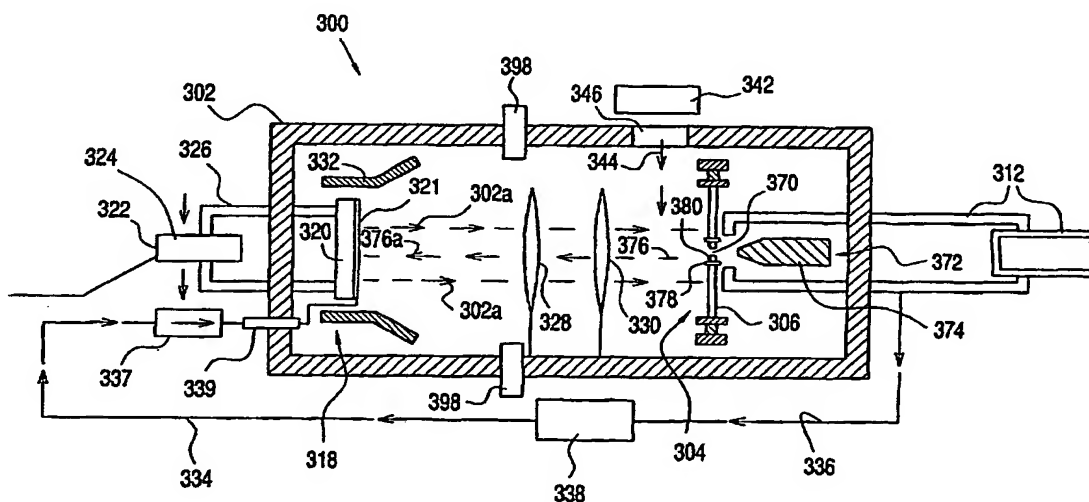
(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: THERMIONIC ELECTRIC CONVERTER



(57) Abstract: A thermionic electric converter includes a cathode output enhancing laser (374) operable to direct a laser beam (376) to strike an emissive surface of a cathode emitter (321), to increase the electron output of the cathode emitter (321). The cathode output enhancing laser (374) is positioned to direct a laser beam (375) through an opening (370) in the anode (306) or target structure, in the direction of the cathode emitter (321). An electron repulsion ring (380) is provided at an edge of the opening (370) in the anode (306), to reduce the number of electrons missing the anode (306) and passing through the opening (370) in the anode (306).

WO 2005/052983 A1